



## 9.28 Township of Mount Olive

This section presents the jurisdictional annex for the Township of Mount Olive.

### 9.28.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: Fred Detoro Address: 204 Flanders Drakestown Road Phone: 973-691-0900 E-mail: fdetoro@mtolivetwp.org	Name: Eric Anthony Address: 204 Flanders Drakestown Road Phone: 973-691-0900 ext.7590 E-mail: eanthony@mopd.org

### 9.28.2 Municipal Profile

The Township of Mount Olive is located in the northwest portion of Morris County. It is served by two major east-west arteries (Interstate 80 and U.S. Route 46). It has a total area of 31.08 square miles, of which 29.41 square miles is land and 1.68 square miles is water. Route 206 is a major north-south route that travels through the Township and intersects with Interstate 80 in the vicinity of the borders with Roxbury Township and Netcong Borough. In the south, Route 206 crosses the border with Chester Township and connects with Interstate 287 further south in Somerset County. The Township has two unincorporated communities: Budd Lake and Flanders. According to the U.S. Census, the 2010 population for the Township of Mount Olive was 28,117.

The Township borders two counties and eight municipalities. The Musconetcong River, which flows along the Township's northern border, is the geographic boundary between Morris County and Warren County and Morris County and Sussex County. Wills Brook and Mine Brook are located within Mount Olive and feed the Musconetcong River. Wills Brook originates near the eastern corporate limits of Mount Olive and flows northwest and then north before its confluence with the Musconetcong River. Budd Lake is the most prominent surface water body within the Township and the South Branch Raritan River begins at the southern tip of the Lake. The South Branch Raritan River is another major waterway in the Township and has a drainage area of 276 square miles. From origin point at Budd Lake, it flows southwest and loops to the east and joins the North Branch Raritan River near Raritan to form the mainstream of the Raritan River. Other streams and brooks located within Mount Olive that are tributaries to the South Branch Raritan include Black Brook, Sun Valley Brook, Turkey Brook, Flanders Brook, Drakes Brook, Kruegers Brook, and Kiwanis Park Brook.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in Section 9.28.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.28-1. Growth and Development**

Property or Development Name	Type (e.g., Res., Comm.)	# of Units/ Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to present</b>					
Morris Chase (Toll)	Res	479	Flanders Road	None	75%



Property or Development Name	Type (e.g., Res., Comm.)	# of Units/ Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Brothers)					
Morris Hunt (Toll Brothers)	Res	86	Flanders Netcong Road	None	95%
Woodfield at Mount Olive	Res	45	Windinghall Drive	None	95%
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Regency at Flanders	Res	284	Pleasant Hill Road	Karst Hazard	Planned
Mount Olive Center Assoc	Res	278	Route 26	None	Planned

\* Only location-specific hazard zones or vulnerabilities identified.

### 9.28.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.28-2. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	Warming stations were opened in the Township due to power outages. There were multiple road closures and widespread power outages that lasted three days. There was police overtime and DPW clean up that totaled over \$6,000.
August 26 – September 5, 2011	Hurricane Irene	EM-3332 DR-4021	Yes Yes	During Irene, the Township conducted evacuations and swift water rescues. There were multi-road closures and widespread power outages that lasted two weeks. A private bridge was damaged to the point of replacement. There was road damage on River Road as well. There was police overtime and DPW clean up that totaled over \$13,000.
October 26 – November 8, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes Yes	During Irene, the Township conducted evacuations and swift water rescues. There were multi-road closures and widespread power outages that lasted two weeks. A private bridge was damaged to the point of replacement. There was road damage on River Road as well. There was police overtime and DPW clean up that totaled over \$22,000.



### 9.28.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Township of Mount Olive. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Mount Olive.

**Table 9.28-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Occasional	24	Medium
Earthquake	500-year MRP: \$4,484,839 2,500-year MRP: \$82,637,921	Occasional	28	Medium
Extreme Temperature	Damage estimate not available	Frequent	18	Medium
Flood	1% Annual Chance: \$2,776,201	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$47,991,925	Frequent	18	Medium
Severe Storm	100-Year MRP: \$2,634,832 500-year MRP: \$32,671,275 Annualized: \$183,137	Frequent	48	High
Winter Storm	1% GBS: \$77,265,197 5% GBS: \$386,325,985	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$53,149,378	Frequent	18	Medium
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- The valuation of general building stock and loss estimates was based on custom inventory for the municipality.  
High = Total hazard priority risk ranking score of 31 and above  
Medium = Total hazard priority risk ranking of 20-30+  
Low = Total hazard risk ranking below 20
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.



### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Mount Olive.

**Table 9.28-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Township of Mount Olive	111	43	\$658,052.54	2	0	51

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014.

Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

### Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

**Table 9.28-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent(2)
Clover Hill STP	Wastewater	X	X	6.62	-	-
Pinelands Wastewater Co	Wastewater	X	X	1.89	-	-
Upper Waterloo Lake Dam	Dam	X	X	-	-	-

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

### Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, history of flooding in the Township of Mount Olive indicates that flooding can be experienced at any time of the year. The most



extensive flooding occurs in late summer and fall and is usually associated with tropical storms moving north along the Atlantic coast (FEMA FIS 2010).

Additionally, the Township indicated the following to be vulnerable areas in their municipality:

- Herman Road flooding issues during rain events, issues with South Branch of the Raritan.
- Mannerhouse Road flooding issues during rain events, issues with stream off of Budd Lake.

### 9.28.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

#### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Mount Olive.

**Table 9.28-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes 2003, 2012	Local	Township Administrator	There have been subsequent updates and reexamination reports pursuant to statutory requirements. Township has a separate Master Plan for the Highlands Preservation Area.
Capital Improvements Plan	Yes	Local	Township Board	Annual Budget
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes	Local	Planning Board	Stormwater Management Plan for the Township of Mount Olive
Open Space Plan	Yes	Local	Planning Board	Part of Master Plan
Stream Corridor Management Plan	No			Currently in progress
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	Local	OEM	Consists of OEM Annex, HMP and COOP/COG (updated 2014)
Emergency Response Plan	Yes	Local	OEM	Consists of OEM Annex, HMP and COOP/COG (updated 2014)
Post-Disaster Recovery Plan	Yes	Local	OEM	Listed in the OEM Annex
Transportation Plan	No			



Table 9.28-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Strategic Recovery Planning Report	No			
Other Plans:	Yes	Local	Planning Board	2012 - Township adopted a separate Master Plan concerning the New Jersey Highlands Preservation Area Sept. 2014 – COOP/COG
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Building Dept.	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Department of Planning and Zoning	Chapter 400, Article VI
Subdivision Ordinance	Yes	Local	Department of Planning and Zoning	Chapter 400, Article V §400-73
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Department of Planning and Zoning	Chapter 400, Article V §400-48
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local	Department of Planning and Zoning	Chapter 400, Article V §400-48
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	Local	Department of Planning and Zoning	Chapter 400, Article IV §400-29
Stormwater Management Ordinance	Yes	Local	Department of Planning and Zoning	Chapter 213 (Stormwater Management)
Municipal Separate Storm Sewer System (MS4)	Yes	Local	Department of Planning and Zoning	Chapter 213 (Stormwater Management) Chapter 400, Article V §400-74.1
Natural Hazard Ordinance	Yes	Local	Department of Planning and Zoning	Land Use Ordinance Section 400-50 Floodplain Regulations and Section 400-40 Critical Areas
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	N/A			



### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Mount Olive.

**Table 9.28-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Township of Mount Olive Planning Board
Mitigation Planning Committee	Yes	2015 Plan Update
Environmental Board/Commission	Yes	Environmental Commission
Open Space Board/Committee	Yes	Open Space Committee
Economic Development Commission/Committee	Yes	Industrial and Economic Development Committee
Maintenance Programs to Reduce Risk	Yes	
Mutual Aid Agreements	Yes	Surrounding Communities
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Engineering Division, Planning & Zoning
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineering Division, Planning & Zoning
Planners or engineers with an understanding of natural hazards	No	Township uses a planning consultant; however, the planning consultant does not provide services with respect to natural hazard risk reduction
NFIP Floodplain Administrator	Yes	Gene Buczynski P.E. VCEA
Surveyor(s)	Yes	Engineering Division, Planning & Zoning
Personnel skilled or trained in GIS and/or Hazus-MH applications	No	
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Fire Marshall, OEM
Grant Writer(s)	Yes	Engineering Division, Planning & Zoning
Staff with expertise or training in benefit/cost analysis	Yes	Engineering Division, Planning & Zoning
Professionals trained in conducting damage assessments	Yes	In-house staff performs estimates

### Fiscal Capability

The table below summarizes financial resources available to the Township of Mount Olive.

**Table 9.28-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No





Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Township of Mount Olive.

**Table 9.28-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	NP	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	4/2/15
Storm Ready	No	NP	N/A
Firewise	No	NP	N/A
Disaster/Safety Programs in/for Schools	Yes	N/A	N/A
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes	N/A	N/A
Public-Private Partnerships	Yes	N/A	N/A

*N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.*

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>





- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

### Self-Assessment of Capability

The table below provides an approximate measure of Mount Olive's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.28-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability		X	
Community Political Capability		X	
Community Resiliency Capability		X	
Capability to Integrate Mitigation into Municipal Processes and Activities.		X	

### National Flood Insurance Program

#### NFIP Floodplain Administrator

Gene Buczynski P.E. VCEA

#### Flood Vulnerability Summary

The Township currently does not maintain lists/inventories of flood-damaged properties. During Sandy, no lists were made of the number of homes damaged. Residents were instructed to contact FEMA directly. Substantial Damage estimates are not conducted unless damage was severe enough to condemn them. During Sandy, none were conducted. Currently, there are no residents interested in mitigation.

#### Resources

The FPA is not the sole person assuming the responsibilities of floodplain administration. NFIP administration services are conducted by the Township's contracted engineering service. The Township does not provide any education or outreach to the community regarding flood hazards/risks or flood risk reduction. The FPA indicated that the lack of training is a barrier to running an effective floodplain management program. However, they feel adequately supported and trained to fulfill their responsibilities as the Township's FPA and would not consider attending continuing education or certification training on floodplain management at this time.



### Compliance History

The Township is in good standing in the NFIP program. It is unknown when the most recent compliance audit was conducted.

### Regulatory

The Township's floodplain management regulations/ordinances do not meet or exceed FEMA and state minimum requirements. Local ordinances that support floodplain management include no building in wetlands throughout the Township. The Township of Mount Olive does not participate in the Community Rating System (CRS) program and does not wish to consider joining at the time of this plan update.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

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The Township of Mount Olive has a Master Plan dated 2003 and subsequent updates and reexamination reports pursuant to statutory requirements. The Township is located within the New Jersey Highlands Region and approximately 80% of the Township now falls within the Highlands Preservation Area. Development in this area is strictly regulated by the New Jersey Highlands Council and the NJDEP pursuant to the Highlands Water Protection and Planning Act. The Township adopted a separate Master Plan in 2012 concerning the Preservation Area. In addition to the Highlands Region, the Master Plan also addresses other environmentally sensitive characteristics of the Township. The Master Plan is currently being updated and it will refer to the Morris County HMP.

The Township is an MS4 regulated community and as a formal Stormwater Management Plan. The Plan specifies projects, actions and initiatives to reduce and/or mitigate the volume of stormwater or flooding. Additionally, the Township has an Open Space Plan that includes environmental sensitive land and preservation strategies. A Stream Corridor Management Plan is currently in progress.

The Township of Mount Olive has a Continuity of Operations/Continuity of Government (COOP/COG) Plan that serves to protect the local government and operations from natural hazard events. The Plan was adopted in September 2014. The Township also has a Comprehensive Emergency Management Plan that consists of the OEM annex, HMP and COOP/COG. The OEM Annex also lists the Post-Disaster Recovery Plan for the Township.

### Regulatory and Enforcement

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The Township's Land Use Ordinance, Section 400-50 Floodplain Regulations and Section 400-40 Critical Areas, consider natural hazard risks. The Township Planning Board uses the advice of Township professionals and the Emergency Management Coordinator to guide their decisions with respect to natural hazard risk management. The Planning Board requires developers to take additional actions to mitigate natural hazard risk.



### Operational and Administration

The Township has a planning consultant; however, the planner does not provide services with respect to natural hazard risk reduction. The Township has a Planning Board in accordance with its statutory authority. The Board reviews all site plans, subdivision, and variance applications in accordance with the adopted codes in the Township of the Mount Olive and pursuant to its jurisdiction under the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.). Gene Buczynski P.E. VCEA performs both Stormwater Management functions and NFIP Floodplain Management functions within the Township.

The Township identified that staff would benefit from attending additional training and/or certification in risk management and recovery process. Township staff and departments participate in a building code official group and LEPC or emergency services meetings which all support natural hazard risk reduction and build hazard management capabilities.

### Fiscal

Currently, the municipal/operating budget does not include line items for mitigation projects or activities. The Township does have a Capital Improvements Budget which includes budget for mitigation-related projects. The Township of Mount Olive pursued funding for a generator for their critical facilities at a total cost of \$500,000. The local share for this project is approximately 50% and the Township is awaiting award.

### Education and Outreach

The Township uses Everbridge communications ahead of storms, as needed, and the messages are tailored to the type of expected hazard. The Township also uses their website and social media to communicate with and educate Township residents on natural hazards.

## 9.28.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

### Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



**Table 9.28-11. Past Mitigation Initiative Status**

2010 Mitigation Action	Lead Agency	Status	Describe Status	Next Step	Describe Next Step
<b>Mt Olive Twp. 1:</b> Backup power (generator) for Municipal Complex (shelter).	Engineering Department	In Progress	Final Stages of State Review for grant	Include in the 2015 HMP Update	Waiting for final review and release of grant monies. See TMO-2 in next table.
<b>Mt Olive Twp. 2:</b> Backup power (generator) for Fire Stations (two).	Engineering Department	Complete	Project complete	Discontinue	
<b>Mt Olive Twp. 3:</b> Building code update.	Municipal Code Enforcement	In Progress	This action is an on-going administrative function of the Township Building Code Official. IBC is reviewed by the State and then provided to every municipality upon approval of the State DCA.	Discontinue	
<b>Mt Olive Twp. 4:</b> Storm water runoff control upgrade on Route 46 and Woodsedge Avenue.	DPW	No Progress	Budget restrictions have prevented this action from being implemented	Include in the 2015 HMP Update	
<b>Mt Olive Twp. 5:</b> Survey/evaluation of Manor House Road flooding.	DPW	No Progress	At this time owner did not wish to participate in the program	Include in the 2015 HMP Update	At this time owner did not wish to participate in the program. This action will be rephrased and included in the 2015 Plan update.  Re-word initiative: Inquire of residents on Manor House Road to determine if they are willing to participate in an elevation or acquisition project.
<b>Mt Olive Twp. 6:</b> Survey/upgrade of storm water control system, downstream and Pheasant Court.	DPW	No Progress	Budget restrictions have prevented this action from being implemented	Include in the 2015 HMP Update	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court
<b>Mt Olive Twp. 7:</b> Acquisition/elevation of one flood prone property on Stevens Mill Road.	Engineering Department	No Progress	At this time owner did not wish to participate in the program	Discontinue	At this time, the owner does not wish to participate in the program. This action will be not be included in the 2015 Plan Update.
<b>Mt Olive Twp. 8:</b> Acquisition/elevation of one repetitive loss property located on Hermainne Drive.	Municipal OEM	No Progress	At this time owner did not wish to participate in the program	Discontinue	At this time, the owner does not wish to participate in the program. This action will be not be included in the 2015 Plan Update.
<b>Mt Olive Twp. 9:</b> Acquisition/elevation of 10 flood prone properties located on Hermainne Drive.	Municipal OEM	No progress	At this time owner did not wish to participate in the program	Include in the 2015 Update	At this time owner did not wish to participate in the program. This action will be rephrased and included in the 2015 Plan Update as a new action.
<b>Mt Olive Twp. 10:</b> Acquisition/elevation of 20	Municipal OEM	No progress	At this time owner did not wish to participate in the program	Include in the 2015	At this time owner did not wish to participate in the program. This action will be rephrased and



Table 9.28-11. Past Mitigation Initiative Status

2010 Mitigation Action	Lead Agency	Status	Describe Status	Next Step	Describe Next Step
flood prone properties located on Downstream Drive.				Update	included in the 2015 Plan Update as a new action.
<b>Mt Olive Twp 11:</b> Develop all-hazards public education and outreach program for hazard mitigation and preparedness.	County and Municipal OEM	In progress	Forever ongoing	Include in the 2015 Update	



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### Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

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None noted

### Proposed Hazard Mitigation Initiatives for the Plan Update

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The Township of Mount Olive participated in a mitigation action workshop in January 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.28-12 summarizes the comprehensive-range of specific mitigation initiatives the Township of Mount Olive would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.28-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.28-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
TMO-1	Replacement of backup generator and Uninterrupted Power Supply (Sandy LOI)	Existing	All	3	Engineering	High	High	HMGP	Short Term	High	SIP	PP
TMO-2 (former Mt Olive Twp 1)	Backup generator for the municipal building (Sandy LOI)	Existing	All	3	Engineering	High	High	HMGP	Short Term	High	SIP	PP
TMO-3 (former Mt Olive Twp 4)	Storm water runoff control upgrade on Route 46 and Woodsedge Avenue.	Existing	Flood, Severe Weather, Severe Winter Weather	3	DPW	High	High	FMA, PDM-C, HMGP	Short Term	High	SIP, NSP	PP, NR
TMO-4 (former Mt Olive Twp 5)	Inquire of residents on Manor House Road to determine if they are willing to participate in an elevation or acquisition project.	Existing	Flood, Severe Weather, Severe Winter Weather	1, 3, 5	DPW, Engineering, Township OEM	High	High	FMA, PDM-C, HMGP	Short Term	High	SIP	PP
TMO-5 (former Mt Olive Twp 6)	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court.	Existing	Flood, Severe Weather, Severe Winter Weather	3	DPW	High	High	FMA, PDM-C, HMGP	Short Term	High	SIP	PP
TMO-6 (former Mt Olive Twp 11)	Develop/Enhance all-hazards public education and outreach program for hazard mitigation and preparedness.	All	N/A	1, 2, 3	OEM Coordinator, MCOEM	Medium	Low to Medium (staff time)	Mount Olive Twp, PDM-C and HMGP	Ongoing	High	EAP	PI
TMO-7 (new and former Mt Olive Twp 9 and 10)	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable (there are 2 RLs in the Township) Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding and local match availability.											
	See above.	Existing	Flood, Severe Weather, Wildfire, Severe Winter Weather	1, 3, 5	Engineering via NFIP FPA with NJOEM, FEMA support	High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Ongoing (outreach and specific project identification); Long term DOF (specific project application and implementation)	High	SIP	PP



**Notes:**

Not all acronyms and abbreviations defined below are included in the table.

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NJOEM	New Jersey Office of Emergency Management
OEM	Office of Emergency Management

**Potential FEMA HMA Funding Sources:**

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued 2015)

**Timeline:**

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

**Costs:**

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

**Benefits:**

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

**Mitigation Category:**

- **Local Plans and Regulations (LPR)** – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Project (SIP)**- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- **Natural Systems Protection (NSP)** – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- **Education and Awareness Programs (EAP)** – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

**CRS Category:**



- *Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.*
- *Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.*
- *Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.*
- *Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities*



Table 9.28-13. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
TMO-1	Replacement of backup generator and Uninterrupted Power Supply (Sandy LOI)	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
TMO-2 (former Mt Olive Twp 1)	Backup generator for the municipal building (Sandy LOI)	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
TMO-3 (former Mt Olive Twp 4)	Storm water runoff control upgrade on Route 46 and Woodsedge Avenue.	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
TMO-4 (former Mt Olive Twp 5)	Inquire of residents on Manor House Road to determine if they are willing to participate in an elevation or acquisition project.	1	1	1	1	1	1	1	0	1	1	0	0	1	1	11	High
TMO-5 (former Mt Olive Twp 6)	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court.	1	1	1	1	1	1	0	0	1	1	1	0	1	1	11	High
TMO-6 (former Mt Olive Twp 11)	Develop Enhance all-hazards public education and outreach program for hazard mitigation and preparedness.	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
TMO-7 (new and former Mt Olive Twp 9 and 10)	Support the mitigation of vulnerable structures via retrofit	1	1	1	1	1	1	0	0	1	1	1	0	1	1	11	High

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



### **9.28.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.28.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Township of Mount Olive that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Mount Olive has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### **9.28.9 Additional Comments**

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None at this time.





Figure 9.28-1. Township of Mount Olive Hazard Area Extent and Location Map 1

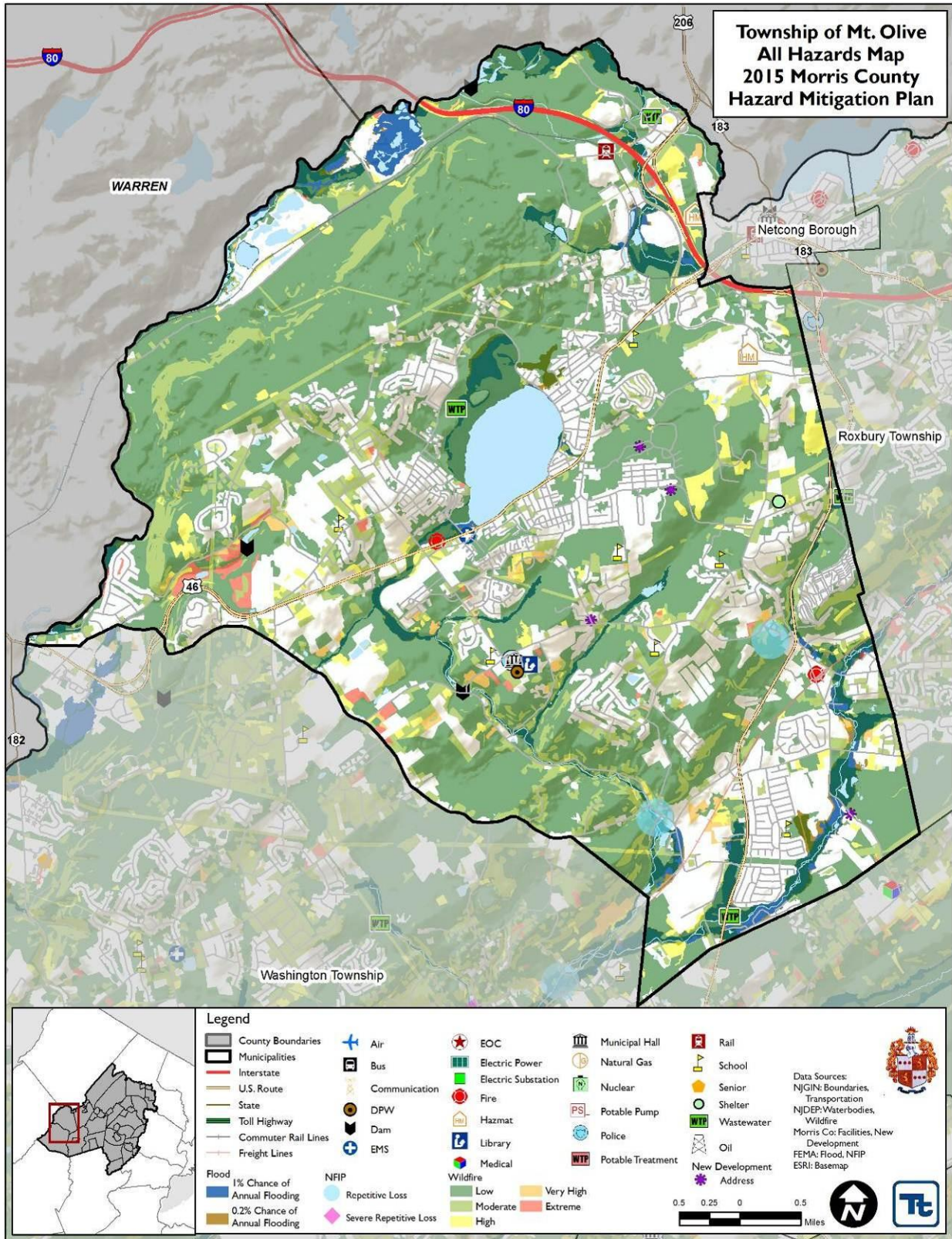
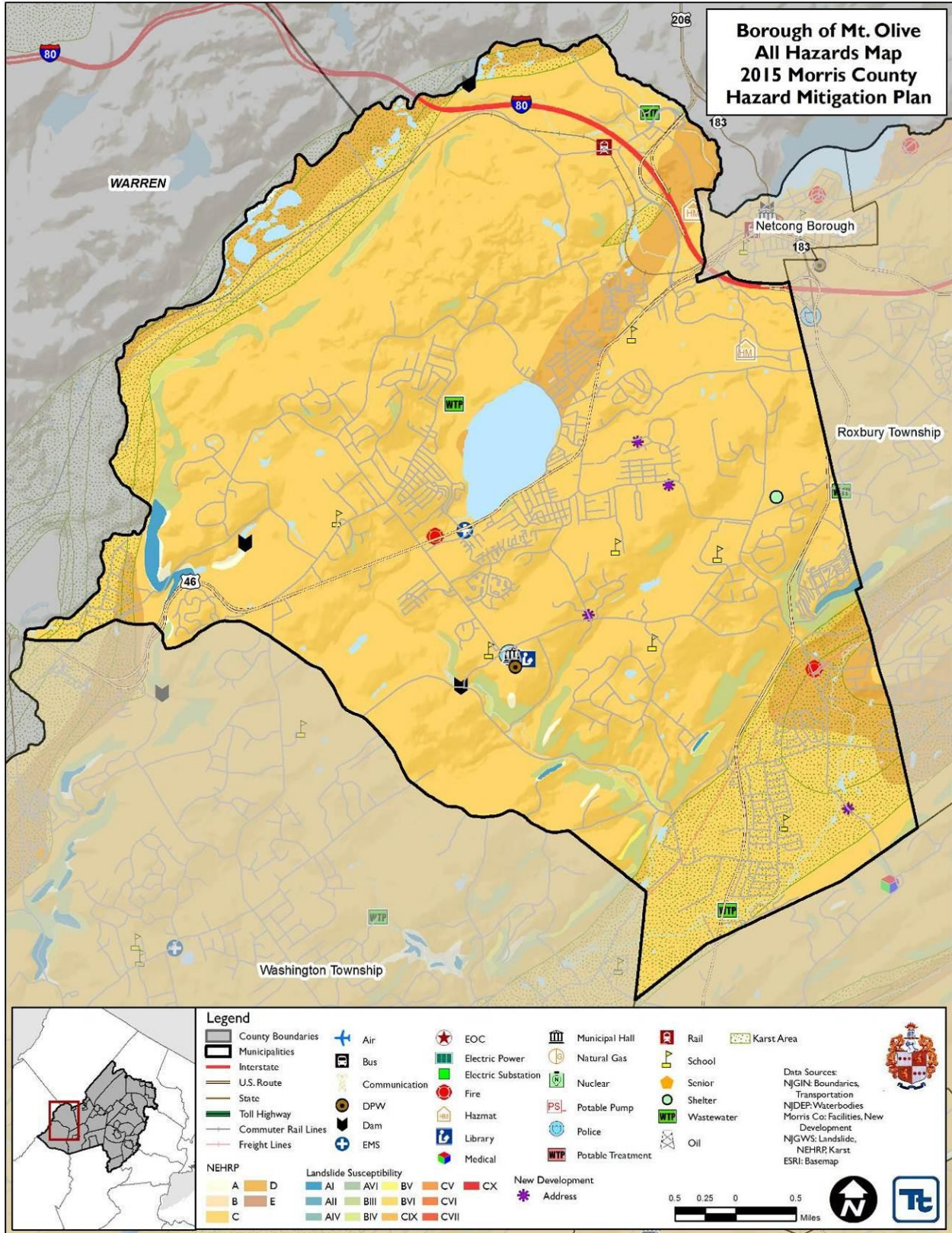






Figure 9.28-2. Township of Mount Olive Hazard Area Extent and Location Map 2





Name of Jurisdiction: Township of Mount Olive  
Action Number: TMO-1  
Mitigation Action/Initiative: Replacement of backup generator and UPS

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Loss of power to critical facilities in the Township
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Purchase replacement backup generator and UPS
	2. Use smaller portable generators
	3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	Purchase and install a replacement backup generator and UPS for Mount Olive Township
Action/Project Category	SIP
Goals/Objectives Met	3
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	High (\$846,840)
Priority*	High
Plan for Implementation	
Responsible Organization	Township Engineering
Local Planning Mechanism	Capital Improvement
Potential Funding Sources	HMGP with local match
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)





Name of Jurisdiction:

Township of Mount Olive

Action Number:

TMO-1

Mitigation Action/Initiative:

Replacement of backup generator and UPS

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



**Name of Jurisdiction:** Township of Mount Olive  
**Action Number:** TMO-2 (former Mt Olive Twp 1)  
**Mitigation Action/Initiative:** Backup generator for municipal building

Assessing the Risk	
<b>Hazard(s) addressed:</b>	All
<b>Specific problem being mitigated:</b>	Loss of power to the municipal building / critical facilities
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Purchase backup generator for municipal building
	2. Use smaller portable generators
	3. Do nothing – current problem continues
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Purchase and install a backup generator for the municipal building in the Township
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	3
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High (\$688,520)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Township Engineering
<b>Local Planning Mechanism</b>	Capital Improvement
<b>Potential Funding Sources</b>	HMGP with local match
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



**Name of Jurisdiction:**

Township of Mount Olive

**Action Number:**

TMO-2 (former Mt Olive Twp 1)

**Mitigation Action/Initiative:**

Backup generator for municipal building

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



**Name of Jurisdiction:** Township of Mount Olive  
**Action Number:** TMO-3 (former Mt Olive Twp 4)  
**Mitigation Action/Initiative:** Stormwater runoff control upgrade on Route 46 and Woodsedge Ave

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood
<b>Specific problem being mitigated:</b>	Flooding in the area of Route 4 and Woodsedge Avenue
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Do nothing – current problem continues
	2.
	3.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Upgrade the stormwater runoff control system along Route 46 and Woodsedge Avenue
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	3
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High (\$1 million)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	DPW
<b>Local Planning Mechanism</b>	Capital Improvement
<b>Potential Funding Sources</b>	FMA, PDM-C and HMGP if available
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



**Name of Jurisdiction:** Township of Mount Olive  
**Action Number:** TMO-3 (former Mt Olive Twp 4)  
**Mitigation Action/Initiative:** Stormwater runoff control upgrade on Route 46 and Woodsedge Ave

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



<b>Name of Jurisdiction:</b>	Township of Mount Olive
<b>Action Number:</b>	TMO-6 (former Mt Olive Twp 6)
<b>Mitigation Action/Initiative:</b>	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood
<b>Specific problem being mitigated:</b>	Inadequate stormwater control system in the area of Down Stream Drive and Pheasant Court
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Do nothing – current problem continues
	2.
	3.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	3
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Medium
<b>Estimated Cost</b>	Medium (\$80,000)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	DPW
<b>Local Planning Mechanism</b>	Capital Improvement
<b>Potential Funding Sources</b>	FMA, PDM-C and HMGP if available
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



<b>Name of Jurisdiction:</b>	Township of Mount Olive
<b>Action Number:</b>	TMO-6 (former Mt Olive Twp 6)
<b>Mitigation Action/Initiative:</b>	Upgrade underground piping of storm water control system for Down Stream Drive and Pheasant Court

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	